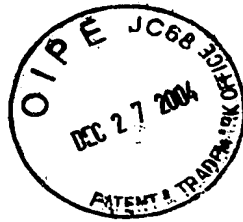


DOCKET NO: 202498US2CONT



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
KESATOSHI TAKEUCHI : EXAMINER: KUMAR, S.
SERIAL NO: 09/776,677 :
FILED: FEBRUARY 6, 2001 : GROUP ART UNIT: 2675
FOR: METHOD AND APPARATUS FOR :
ADJUSTING QUALITY OF A
DISPLAYED IMAGE

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

The present Appeal Brief is submitted in response to the Final Rejection of February
24, 2004.

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REAL PARTY IN INTEREST

The real party in interest in the present appeal is Seiko Epson Corporation having a place of business at 4-1, Nishi-shinjuku 21-chome, Shinjuku-ku Tokyo, Japan.

RELATED APPEALS AND INTERFERENCES

Appellant, appellant's legal representatives, and assignee are not aware of any other appeals, interferences, or judicial proceedings that will directly effect or be directly affected by or have a bearing on the board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-21 are pending in this application and Claims 1-21 are being appealed.

STATEMENT OF AMENDMENTS

No amendment was filed subsequent to the Final rejection of February 24, 2004. A Request For Reconsideration was filed on June 24, 2004 and an Information Disclosure Statement was filed on October 12, 2004. Appellant is awaiting a confirmation of consideration of the references cited in that Information Disclosure Statement.

SUMMARY OF CLAIMED SUBJECT MATTER

The applicant of the present invention recognized that image processing apparatuses include several types of adjustments to image quality, such as adjusting a sharpness, as a non-limiting example. The applicant of the present invention also recognized that when sharpness is adjusted other image qualities, such as contrast and brightness of an image, are also

effected, which is one problem that the present invention addresses. (See for example the present specification at page 1, lines 23-28).

To address the above-noted drawback, the applicant of the present invention devised the claimed invention to reduce the influence that an image quality adjustment makes upon a contrast or brightness of an image. Specifically, according to the present invention when the user adjusts for example a sharpness, the present invention provides an image processing to maintain a brightness unchanged at sufficiently large areas in the displayed image regardless of the setting of the sharpness adjustment. (See for example the present specification at page 11, lines 25-29).

The present invention is directed to an image display apparatus including an image display, processing device, or method to display an image. (See for example the present specification at page 4, lines 21-27 and elements 50, 32, 52, Sc). A setting section, means, or method operation allows a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image. (See for example the present specification at page 10, lines 25-28, page 6, lines 5-6, and page 8, lines 12-14). An image processing section, means, or method operation performs image quality adjustment of the image according to the setting made by the user, and performs contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within the image displayed by the image display device, regardless of the setting of the image quality adjustment. (See for example in the specification element 68, and page 7, lines 21-23, page 8, line 13-21, and page 9, line 9 to page 10, line 13).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The only grounds for rejection to be reviewed on appeal and outstanding in the present application is the combination of teachings in U.S. patent 6,160,576 to Higuchi et al.

(herein "Higuchi") in view of U.S. patent 6,330,038 to Johnson to render obvious each of claims 1-21 under 35 U.S.C. §103(a).

ARGUMENT

As a summary of the following arguments, applicants note Higuchi and Johnson do not disclose or suggest that any setting section therein allows a user to directly set image quality excluding contrast and brightness. Further, neither Johnson nor Higuchi disclose or suggest that when a sharpness is set a brightness is maintained. As such, no combination of teachings of Higuchi in view of Johnson meets all the claim limitations, and thus each of claims 1-21 distinguishes over the applied art.

As noted above, the applicant of the present invention recognized that image processing apparatuses include several types of adjustments to image quality, such as adjusting a sharpness, as a non-limiting example. The applicant of the present invention also recognized that when sharpness is adjusted other image qualities, such as contrast and brightness of an image, are also affected.

Accordingly, the applicant of the present invention devised the claimed invention to reduce the influence that an image quality adjustment makes upon a contrast or brightness of an image. To achieve the above operation, the claimed image display device of independent claim 1 allows a user to *directly* set an image quality adjustment that is not a contrast or brightness adjustment of an image. In one non-limiting example, and as recited in dependent claims 2 and 15, that image quality adjustment may be a sharpness adjustment. As noted above, the applicant of the present invention recognized that an image quality adjustment that excludes contrast and brightness adjustment may adversely affect the contrast or brightness. To address that drawback, independent claim 1 further requires an image processing section "to perform contrast compensation *to maintain a brightness* at a center of a specific color

region larger than a predetermined size within the image displayed by the display device, regardless of the setting of the image quality adjustment” (emphasis added). That is, according to such a feature as recited in independent claim 1, a brightness in a specific region is ***maintained*** even when the image quality adjustment is made. In the specific non-limiting example noted above (see dependent claims 2 and 15), when a sharpness adjustment is made, a brightness is maintained at a center of a specific color region that exceeds a predetermined size. Such subject matter is also shown for example in Figures 5(a)-5(d) in the present specification. It is also noted that the other independent claims 6, 9, 12, 14, and 19 recite similar features as noted above with respect to independent claim 1.

One basis for the outstanding rejection noted in the Final Rejection is that the rejection appears to indicate that the age dial 14 in Higuchi corresponds to the claimed “setting section configured to allow a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image”.¹

In response, applicant submits that position for the outstanding rejection is not properly considering the claimed features. More particularly, an age dial in Higuchi does not involve ***directly setting an image quality adjustment***. As noted in the Final Rejection the setting of the age dial can control certain color compensator parameters in Higuchi. However, that is at most an ***indirect*** control from the setting of the age dial 14. There is no requirement in Higuchi that based on the set ages a color compensation is made. At most setting the age dial 14 will ***indirectly*** change different image quality adjustments in Higuchi. In contrast to that teaching in Higuchi, in the claims as currently written the setting section allows a user to ***directly set image quality adjustment***. A direct setting of image quality adjustment is not the same as an indirect control of a color compensating parameter based on

¹ Final Rejection of February 24, 2004, the paragraph bridging pages 5 and 6.

a direct setting of an age dial in Higuchi. Thus, the outstanding Final Rejection is improper in that regard.

The outstanding rejection also recognizes that Higuchi does not disclose that the setting section (Fig. 1, item 14) is configured to allow a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image.²

To overcome the recognized deficiencies in Higuchi, the outstanding Final Rejection cites the teachings in Johnson. The Final Rejection specifically states:

Johnson discloses a video sharpness control device for a display. Johnson discloses in Fig. 7A and in col. 9, lines 29-43, where the sharpness may be set by the user separately from the brightness and contrast, so that the brightness can be maintained. It would have been obvious to one of ordinary skill in the art to combine the systems of Higuchi et al with that of Johnson as they both disclose displays with setting controls. The system of Johnson is advantageous as it enhances the video image by allowing the user to set controls separately.³

The above-noted grounds for rejection is traversed in the following aspects. First, Johnson in fact does not disclose the claimed features as relied upon in the Final Rejection. Further, even combining the teachings in Johnson with those of Higuchi would not meet the claim limitations. Also, no motivation exists to combine the teachings in Johnson and Higuchi.

The above-noted basis for the outstanding rejection cites Johnson at col. 9, lines 29-43. At that portion Johnson states:

FIG. 7A illustrates an exemplary video image 10 that is composed primarily of the broadcast television signal (black and white bars 12 and 14 in this example) and a graphical user applet 200. Using a remote control or the control panel 46, a viewer may cause the applet 200 to appear on the video image 10 so that the viewer can adjust various characteristics of the video image 10. For instance, the applet 200 may include user adjustable "slide controls," such as a brightness control 200, a contrast control 204, a tint control 206, and a sharpness control

² Final Rejection of February 24, 2004, page 3, lines 6-8.

³ Final Rejection of February 24, 2004, page 3, lines 9-14.

208. As illustrated in the enlarged view of FIG. 7B, the sharpness control 208 may include a “slide” 210 that may be placed at any one of eight different settings 212a, 212b, 212c, 212d, 212e, 212f, 212g, and 212h.

The above-noted passage in Johnson simply does not teach or suggest the claimed features. The above-noted portion in Johnson merely discloses conventional controls such as a brightness control, a contrast control, a tint control, and a sharpness control.

As noted above, in one feature in the claimed invention when an image adjustment besides brightness or contrast is made a brightness can be maintained at a center of a specific color region that exceeds a predetermined size. That is, in the claimed invention, an image adjustment excluding contrast and brightness can result in the change of a brightness control. Such a feature clearly is neither taught nor suggested, nor even eluded to, in Johnson. Johnson discloses a tint control 206 and a sharpness control 208. However, Johnson does not disclose or suggest that utilizing the tint control 206 or the sharpness control 208 would have any impact on maintaining a brightness.

In response to arguments as presented above the outstanding Final Rejection presents the following position:

Prior art, Johnson discloses a video sharpness control device for a display. Johnson disclosed in Fig. 7A and col. 9, lines 29-43, where the sharpness may be set by the user separately from the brightness and contrast, *so that the brightness can be maintained*.⁴

The above-noted statement set forth in the outstanding Final Rejection is incorrect and is also ignoring the positively recited claim limitations. First, at column 9, lines 29-43 Johnson simply does not teach or suggest that sharpness is set “so that the brightness can be maintained”. That statement in the Final Rejection is not based on the teachings in Johnson. At column 9, lines 29-43 Johnson discloses a separate brightness control 202, contrast control 204, tint control 206, and sharpness control 208. However, that noted portion of Johnson

⁴Final Rejection of February 24, 2004, page 6, lines 5-7 (emphasis added).

does not teach or suggest that the sharpness is set to maintain a brightness. It is unclear on what basis the outstanding rejection is even making that statement as it is simply not in the disclosure in Johnson at column 9, lines 29-43. Applicant respectfully requests that if any rejection is maintained based on Johnson it be clearly set forth where in column 9, lines 29-43 Johnson discloses that sharpness is set to maintain a brightness. Applicants submit that is simply not the case. Moreover, if that was the case then there would be no need for Johnson to include a separate brightness control 202. That is, if the sharpness is set in Johnson to control brightness there would clearly be no need for the separate brightness control 202 disclosed at column 9, lines 29-43 in Johnson.

Further, the outstanding Final Rejection is clearly still not even properly considering the claimed features. In the claims, when an image adjustment is made to an image quality adjustment excluding contrast or brightness, a contrast compensation is performed to maintain a brightness. Johnson simply does not teach or suggest any such feature with respect to the sharpness control 208. That is, Johnson does not teach or suggest that controlling the sharpness control 208 results in a change in a contrast compensation to maintain a brightness.

Stated another way, the claims clearly recite directly setting an image quality excluding contrast and brightness adjustments. The outstanding rejection appears to indicate that Johnson meets such limitations because Johnson discloses a sharpness control 208.

However, the claims require more than merely directly setting controls besides brightness and contrast. The claims recite that those other controls that adjust image quality (excluding contrast and brightness) perform a contrast compensation to maintain a brightness. For Johnson to meet the claim limitations, Johnson would have to disclose that the sharpness control 208, when set by a user, would result in performing a contrast compensation to

maintain a brightness. Johnson clearly fails to teach or suggest such subject matter and Johnson does not in fact teach or suggest operating in such a manner.

In such ways, the teachings in Johnson do not meet the features relied upon in the outstanding Office Action and do not meet the claim limitations. As a result, no combination of teachings of Johnson in view of Higuchi fully meets the claim limitations.

Moreover, the outstanding rejection has still not even addressed that there is no incentive or motivation to one of ordinary skill in the art to combine the teachings in Higuchi and Johnson in a manner to meet the claim limitations. The motivation set forth in the Final Rejection to combine such teachings is:

It would have been obvious to one of ordinary skill in the art to combine the systems of Higuchi et al with that of Johnson as they both disclose displays with setting controls. The system of Johnson is advantageous as it enhances the video image by allowing the user to set controls separately.⁵

In addressing the above-noted motivation it is first noted that it is irrelevant that both Higuchi and Johnson disclose displays with setting controls. There are clearly many devices with displays with setting controls that are irrelevant to one another.

Further, applicant agrees that Johnson discloses allowing a user to set controls separately. However, that teaching is irrelevant and actually in direct contrast to one of the benefits of the device in Higuchi. That is, Higuchi discloses as a benefit allowing a user to input an age and to have automatic image processing compensations performed “to provide a processed image which is easy for the elder and low vision to read and recognize”.⁶ In such a device in Higuchi one of ordinary skill in the art would not want to include different settings such as a brightness control, a contrast control, a tint control, and a sharpness control in Johnson. Such a modification would destroy one of the main objectives of the device of Higuchi, namely to make a device simple to operate by allowing a user to merely input their

⁵ Final Rejection of February 24, 2004, page 3, lines 11-14.

⁶ Higuchi at column 1, lines 31-33.

age. What the Final Rejection is actually suggesting is to take one main objective of the device of Higuchi, namely to simplify an image adjustment process for an elder user by using a simple age dial, and to introduce the complexity of different image adjustment dials in Johnson, to thereby destroy that objective in the device of Higuchi. Applicant respectfully submits that it clearly would not have been suggested to one of ordinary skill in the art to destroy one benefit of the device in Higuchi in view of the teachings of Johnson, and the outstanding Final Rejection has not even addressed why such a modification would be advantageous.

Further, applicant recognizes that the test for obviousness is not the bodily incorporation of the two different structures in the references, and applicant agrees that “[t]he test is what the combined teachings of the references would have suggested to those of ordinary skill in the art”. Applicant submits that it is the outstanding rejection that is not addressing or considering the teachings of the reference to those of ordinary skill in the art. The outstanding rejection is clearly combining unrelated teachings, and in fact teachings that destroy objectives in the different devices therein, merely in an effort to hindsight reconstruct the claimed invention.

Again, it is respectfully requested that it be clearly stated on the record how it is advantageous to modify Higuchi to utilize separate video image controls as in Johnson as one objective of the device of Higuchi is to avoid using such separate controls and to use a simple age dial. That question must be answered for any consideration of a combination of teachings of Higuchi in view of Johnson.

Moreover, applicant notes that neither Higuchi nor Johnson even address the problem recognized and solved by the present invention.

As noted above, the applicant of the present invention recognized that, as an example, when sharpness is adjusted other image qualities, such as contrast and brightness of an image,

are also effected. To address that recognition, the claimed invention performs contrast compensation to maintain a brightness at a center of a specific region when an image quality adjustment excluding contrast and brightness adjustments is made. Such drawbacks recognized in the prior art are not even addressed in any of the applied art.

Higuchi is not directed to a device that even recognizes the problems that the present invention recognizes and addresses. In that respect it is noted that it is only the applicant who recognized the problem discussed above in that certain image quality adjustments adversely affect contrast and brightness. As noted in MPEP § 2141.02 discovering a source/cause of a problem must be considered, which has not been done in the outstanding Office Action.

Higuchi is directed to a completely different problem than that of the claimed invention. Higuchi is directed to a device for a navigation system installed in a vehicle that can adjust the display of a map depending on an age of an observer. To meet that objective, Higuchi discloses that different color compensation values can be utilized based on a set age.

In such ways, Higuchi clearly does not even recognize, much less address, the same problem as noted above that the present invention recognizes and solves.

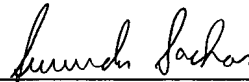
Further, Johnson is directed to a device that can enhance sharpness of a video image. Such a teaching in Johnson is unrelated to performing image compensations based on age-related characteristics as in Higuchi. Johnson also teaches enhancing the luminance signal portion of a television signal, which also is unrelated to the image compensation device based on age-related characteristics as in Higuchi as Higuchi does not even indicate any type of luminance signal portion of the television signal being enhanced based on the age-related characteristics.

In such ways, the teachings in Johnson are not even properly combinable with the teachings in Higuchi.

In view of these foregoing comments, each of the pending claims 1-21 clearly distinguish over the applied art, and thus the outstanding rejection must be REVERSED.

Respectfully submitted,

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CLAIMS APPENDIX

1. An image display apparatus, comprising:
an image display device configured to display an image;
a setting section configured to allow a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image; and
an image processing section configured to perform the image quality adjustment of the image according to the setting made by the user, and to perform contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within the image displayed by the image display device, regardless of the setting of the image quality adjustment.
2. An image display apparatus in accordance with claim 1, wherein the image quality adjustment is a sharpness adjustment.
3. An image display apparatus in accordance with claim 1, wherein the specific color is white.
4. An image display apparatus in accordance with claim 1, wherein the image processing section includes:
an image filter configured to perform the image quality adjustment by selecting one of a plurality of filters with different frequency characteristics according to the setting of the image quality adjustment, and to perform filter processing on the image using the selected filter; and

a contrast compensation section configured to perform the contrast compensation upon the image that has undergone the filter processing, using a contrast compensation value related to the selected filter.

5. An image display apparatus in accordance with claim 4, further comprising a contrast adjustment section configured to perform contrast adjustment of the image independently of the contrast compensation section.

6. An image processing device, comprising:
an image filter configured to perform filter processing of an image by using a selected one of a plurality of filters with different frequency characteristics, the selected filter being selected based on a user directly setting image quality adjustment excluding contrast and brightness adjustment of the image; and

a contrast compensation section configured to perform contrast compensation using a contrast compensation value, related to the selected filter, to maintain a brightness at a center of a specific color region larger than a predetermined size within an image that has undergone the filter processing, regardless of which filter is selected from the plurality of filters.

7. An image processing device in accordance with claim 6, wherein the specific color is white.

8. An image processing device in accordance with claim 6, further comprising a contrast adjustment section configured to perform contrast adjustment of the image independently of the contrast compensation section.

9. An image display apparatus, comprising:

means for displaying an image;

means for allowing a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image; and

means for performing the image quality adjustment of the image according to the setting made by the user, and for performing contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within the image displayed, regardless of the setting of the image quality adjustment.

10. An image display apparatus in accordance with claim 9, wherein the means for performing image quality adjustment includes:

means for performing the image quality adjustment by selecting one of a plurality of filter means with different frequency characteristics according to the setting of the image quality adjustment, and for performing filter processing on the image using the selected filter means; and

contrast compensation means for performing the contrast compensation upon the image that has undergone the filter processing, using a contrast compensation value related to the selected filter means.

11. An image display apparatus in accordance with claim 10, further comprising contrast adjustment means for performing contrast adjustment of the image independently of the contrast compensation means.

12. An image processing device, comprising:

means for performing filter processing of an image by using a selected one of a plurality of filter means with different frequency characteristics, the selected filter being selected based on a user directly setting image quality adjustment excluding contrast and brightness adjustment of the image; and

contrast compensation means for performing contrast compensation using a contrast compensation value, related to the selected filter means, to maintain a brightness at a center of a specific color region larger than a predetermined size within an image that has undergone the filter processing, regardless of which filter means is selected from the plurality of filter means.

13. An image processing device in accordance with claim 12, further comprising contrast adjustment means for performing contrast adjustment of the image independently of the contrast compensation section.

14. A method of displaying an image on an image display device, comprising the steps of:

(a) directly setting a set value for image quality adjustment excluding contrast and brightness adjustments of the image; and

(b) performing the image quality adjustment on the image according to the setting, and performing contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within an image displayed by the image display device, regardless of the setting of the image quality adjustment.

15. A method in accordance with claim 14, wherein the image quality adjustment is a sharpness adjustment.

16. A method in accordance with claim 14, wherein the specific color is white.

17. A method in accordance with claim 14, wherein the step (b) comprising the steps of:

(b1) performing the image quality adjustment by selecting one of a plurality of filters with different frequency characteristics according to the setting of the image quality adjustment, and performing filter processing on the image using the selected filter; and

(b2) performing the contrast compensation upon the image that has undergone the filter processing, using a contrast compensation value related to the selected filter.

18. An image displaying method in accordance with claim 17, further comprising the step of (c) performing contrast adjustment of the image independently of the step (b2).

19. A method of processing image, comprising the steps of:

(a) performing filter processing of an image by using a selected one of a plurality of filters with different frequency characteristics, the selected filter being selected based on a user directly setting image quality adjustment excluding contrast and brightness adjustment of the image; and

(b) performing contrast compensation using a contrast compensation value, related to the selected filter, to maintain a brightness at a center of a specific color region larger than a predetermined size within an image that has undergone the filter processing, regardless of which filter is selected from the plurality of filters.

20. A method in accordance with claim 18, wherein the specific color is white.

21. A method in accordance with claim 18, further comprising the step of (c)
performing contrast adjustment of the image independently of the step (b).

Application No. 09/776,677
Appeal Brief
Reply to Final Rejection of February 24, 2004

EVIDENCE APPENDIX

NONE

Application No. 09/776,677
Appeal Brief
Reply to Final Rejection of February 24, 2004

RELATED PROCEEDINGS APPENDIX

NONE